

## CLAIMS

What is claimed is:

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1. A capillary column, comprising a column, a first capillary and a second capillary, wherein said second capillary is disposed partially within said second capillary, wherein said second capillary is securely positioned within said first capillary using an adhesive agent, and wherein a portion of said second capillary protrudes from said first capillary.

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2. The capillary column of claim 1, wherein said first capillary comprises a material selected from the group consisting of polyimide-coated fused silica, cladded fused silica, PEEKsil<sup>TM</sup>, glass-lined stainless steel, ceramic glass, borosilicate glass, aluminosilicate glass, stainless steel, nickel, platinum, titanium, polypropylene, and alike.

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3. The capillary column of claim 1, wherein said second capillary comprises a material selected from the group consisting of polyimide-coated fused silica, cladded fused silica, glass-lined stainless steel, ceramic glass, borosilicate glass, aluminosilicate glass, stainless steel, nickel, platinum, titanium, polypropylene, and alike.

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4. The capillary column of claim 2, wherein said first and said second capillaries comprise polyimide-coated fused silica.

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5. The capillary column of claim 1, wherein said adhesive agent is PDMS.

6. The capillary column of claim 1, wherein said second capillary protrudes from said first capillary by approximately 1 to 30 mm.

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7. The capillary column of claim 1, wherein said first capillary has an inner diameter of about 100  $\mu\text{m}$ .

8. The capillary column of claim 1, wherein said second capillary has an inner diameter ranging from about 2  $\mu\text{m}$  to about 20  $\mu\text{m}$ .

9. The capillary column of claim 1, wherein said second capillary has an inner diameter ranging from about 2  $\mu\text{m}$  to about 10  $\mu\text{m}$ .

10. The capillary column of claim 1, wherein said first capillary has an outer diameter of about 360  $\mu\text{m}$ .

11. The capillary column of claim 1, wherein said second capillary has an outer diameter of about 90  $\mu\text{m}$ .

12. The capillary column of claim 1 further comprising a coating material.

13. The capillary column of claim 12, wherein said coating material is selected from the group consisting of gold, nickel, titanium, platinum, carbon, polyaniline, polypropylene, polypropylene/graphite, and alike.

14. The capillary column of claim 12, wherein said first capillary is coated.

15. The capillary column of claim 12, wherein said second capillary is coated.

16. The capillary column of claim 12, wherein said first and second capillaries are coated.

17. A capillary column, comprising an inlet, an outlet, a stationary phase, a first capillary, and a second capillary, wherein said second capillary is disposed partially

within said second capillary, wherein said second capillary is securely positioned within said first capillary using an adhesive agent, and wherein a portion of said second capillary protrudes from said first capillary.

18. A capillary column, comprising an inlet, an outlet, a stationary phase, a first capillary, and one or more second capillaries, wherein said second capillary is disposed within said second capillary, wherein said second capillary is securely positioned within said first capillary using an adhesive agent, and wherein at least one end of the second capillary protrudes from said first capillary.

19. A method of separating one or more analytes, comprising:  
admixing said sample with an appropriate mobile phase;  
introducing said sample to a chromatography column having an inlet,  
an  
outlet, a stationary phase, a first capillary, and a second capillary, wherein said second capillary is disposed partially within said second capillary, wherein said second capillary is securely positioned within said first capillary using an adhesive agent, and wherein a portion of said second capillary protrudes from said first capillary;  
separating said analytes via said stationary phase; and  
eluting said analytes from said stationary phase using an appropriate mobile phase.

20. A method of analyzing one or more analytes, comprising:  
admixing said sample with an appropriate mobile phase;  
introducing said sample to a chromatography column having an inlet,  
an  
outlet, a stationary phase, a first capillary, and a second capillary, wherein said second capillary is disposed partially within said second capillary, wherein said second capillary is securely positioned within said first capillary using an adhesive agent, and wherein a portion of said second capillary protrudes from said first capillary;

separating said analytes via said stationary phase;  
forming an eluate by eluting said analytes from said stationary phase  
using  
an appropriate mobile phase; and  
5 introducing said eluate from said second capillary into a detection  
system.

21. The method of claim 20, wherein said detection system is a mass spectrometer.

10 22. An electrospray emitter, comprising a first capillary and a second capillary,  
wherein said second capillary is disposed partially within said second capillary,  
wherein said second capillary is securely positioned within said first capillary using an  
adhesive agent, and wherein a portion of said second capillary protrudes from said  
first capillary.

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23. The capillary column of claim 22, wherein said first capillary comprises a  
material selected from the group consisting of polyimide-coated fused silica, cladded  
fused silica, PEEKsil™, glass-lined stainless steel, ceramic glass, borosilicate glass,  
aluminosilicate glass, stainless steel, nickel, platinum, titanium, polypropylene, and  
20 alike.

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24. The capillary column of claim 22, wherein said second capillary comprises a  
material selected from the group consisting of polyimide-coated fused silica, cladded  
fused silica, glass-lined stainless steel, ceramic glass, borosilicate glass,  
25 aluminosilicate glass, stainless steel, nickel, platinum, titanium, polypropylene, and  
alike.

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25. The emitter of claim 22, wherein said first and second capillaries comprise  
polyimide-coated fused silica.

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26. The emitter of claim 22, wherein said adhesive agent is PDMS.

27. The emitter of claim 22, wherein said second capillary protrudes from said first capillary by approximately 1 to 30 mm.

28. A method of making an electrospray emitter, comprising:

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obtaining a first capillary;

threading a second capillary into an end portion of said first capillary,

wherein said second capillary has a narrower diameter than said first capillary;

and

securing said second capillary in position within said first capillary

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using an

adhesive agent.

29. The method of claim 28, wherein said adhesive is PDMS.